

CLAIMS

What is claimed is:

Sub. 1
A rotary cutting die for cooperating with a rotary anvil to cut corrugated board comprising:

- (a) a base;
- (b) at least one scrap cutting blade secured to the base of the cutting die for cutting a piece of scrap from a sheet of corrugated board that is directed through a nip defined between the cutting die and the anvil;
- (c) at least one scrap stripper mounted to the base adjacent the blade for stripping a cut scrap piece from the blade and for urging the cut scrap piece against the anvil as the cut scrap piece exits the nip;
- (d) the at least one scrap stripper being constructed of a resilient material and including a base, a flexible finger integral with the base and extending outwardly therefrom at an angle, and an open area defined between the base and the flexible finger; and
- (e) wherein the flexible finger is movable between a retracted position where it lies adjacent the base and an extended position where at least a portion of the finger is separated from the base.

2. The rotary cutting die of claim 1 wherein the finger forms an angle of approximately 30-75 degrees with the base.

3. The rotary cutting die of claim 1 wherein the cutting die is designed to rotate in a certain direction and wherein the finger is angled away from the direction of travel.

4. The rotary cutting die of claim 1 wherein in the retracted position the finger assumes a compressed state and when compressed, the finger is pushed into contact with the base such that both the finger and base can be compressed together in response to the scrap stripper passing through the nip between the cutting die and the anvil.

5. The rotary cutting die of claim 1 including a plurality of the scrap strippers particularly placed on the base to engage one or more cut scrap pieces and strip the one or more scrap pieces from one or more adjacent blades.

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The rotary cutting die of claim 1 wherein prior to entering the nip, the scrap stripper assumes an erect position and upon entering the nip, the finger is closed adjacent the base and the finger and base are compressed together, and upon moving from the nip both the base and the finger expand and the finger separates from the base and moves outwardly towards its extended position and in the process the finger engages and holds a cut piece of scrap adjacent the anvil such that the anvil acts to direct the cut scrap away from the cutting die and anvil.

7. The rotary cutting die of claim 1 wherein the scrap stripper is constructed of a closed cell rubber material having a durometer of approximately 25-60.

Sub 38
A method of cutting corrugated board passing between a rotary cutting die and an anvil, stripping one or more cut scrap pieces from a scrap cutting blade, and directing the cut scrap from the cutting die and anvil, comprising

- (a) directing a sheet of corrugated board through a nip area defined between the cutting die and anvil;
- (b) cutting one or more scrap pieces from the corrugated board as it passes through the nip;
- (c) utilizing a scrap stripper having a base and a flexible finger to strip the cut scrap piece from the scrap blade and to control the direction of movement of the scrap piece as it exits the nip;
- (d) compressing the scrap stripper between the cutting die and the scrap piece by compressing the finger against the base and compressing both the finger and base as the scrap stripper moves through the nip;
- (e) expanding the scrap stripper as it moves from the nip and engaging the cut scrap piece and stripping it from the scrap cutting blade; and
- (f) extending the flexible finger outwardly as the scrap stripper moves from the nip and engaging the cut scrap piece with the extended finger and holding

the cut scrap piece against the anvil with the finger such that the anvil tends to direct the cut scrap piece away from the nip and away from the cutting die and anvil.

9. The method of claim 8 wherein the finger normally extends outwardly past the scrap cutting blade when it assumes a normal non-compressed posture and wherein when the scrap stripper assumes a fully compressed position both the finger and base are compressed such that together they do not extend past the height of the scrap cutting blade.

10. The method of claim 9 wherein the scrap stripper is oriented such that the finger thereof, when extended, extends in a general direction opposite the direction of travel of the cutting die.

11. The method of claim 8 wherein the scrap stripper comprises a resilient member having a base and a flexible angled finger extending from the base such that an open space is defined between the angled finger and the base.

12. The method of claim 11 wherein the angled finger is moved back against the base and the finger and the base are compressed together as the scrap stripper passes through the nip.

13. The method of claim 12 wherein the angled finger expands and extends outwardly to push the cut scrap piece against the anvil as the scrap stripper exits the nip.

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14. The method of claim 13 wherein the angle formed between the base and the finger is approximately 30-75 degrees.

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15. A rotary cutting die having one or more scrap strippers for stripping cut scrap pieces from one or more scrap cutting blades associated with the cutting die comprising;

- (a) a board;
- (b) at least one blade mounted on the for cutting scrap;
- (c) at least one resilient scrap stripper mounted on the board adjacent the scrap cutting blade for stripping a cut scrap piece from the blade; and
- (d) the scrap stripper including a base, an outer flexible portion extending outwardly from the base and being movable back and forth between an extended position and a retracted position, and an open relief area defined intermediately within the scrap stripper that permits the outer flexible portion to flex back and forth between the extended and retracted positions.

16. The cutting die of claim 15 wherein the rotary cutting die is adapted to work in conjunction with a rotary anvil; and wherein the outer portion of the scrap stripper flexes backwardly, in a direction generally opposite to the direction of travel of the cutting die, as the scrap stripper moves through a nip area defined between the cutting die and an associated anvil.

17. The rotary cutting die of claim 16 wherein the outer portion of the scrap stripper includes a flexible finger that is disposed at an angle with respect to

the base and wherein the open relief area is defined between the angled finger and the base.

18. The rotary cutting die board of claim 15 wherein the scrap stripper is constructed of a rubber material having a durometer of approximately 25-60.

19. The rotary cutting die of claim 17 wherein the open relief area is formed by a portion of the angled finger and a portion of the base, and wherein the open relief area is opened along one side opposite where the finger and base merge.

20. The rotary cutting die of claim 18 wherein the finger forms an angled of approximately 30-75 degrees with the base.

21. The rotary cutting die of claim 15 wherein the open relief area is surrounded by the base and outer flexible portion of the resilient scrap stripper.

22. The rotary cutting die of claim 21 wherein the outer flexible portion of the scrap stripper includes two distinct leg portions that extend outwardly from the base and wherein the relief area is defined between the base and the two leg portions.

23. The rotary cutting die of claim 22 wherein the two leg portions form an outer apex.

24. The rotary cutting die of claim 15 wherein the scrap stripper is selectively weighted.

25. The rotary cutting die of claim 24 wherein at least a portion of the scrap stripper spaced outwardly from the base is weighted.

26. The rotary cutting die of claim 25 wherein the cutting die is operative to cooperate with an anvil and wherein the weighted portion of the scrap stripper is generally urged outwardly from the board of the cutting die under the influence of centrifugal force as the scrap stripper exits a nip area defined between the cutting die and the anvil.

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